



...and another thing

Amazing Planning & Development factoids that will keep you riveted!
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**"Water, water everywhere
Nor any drop to drink"**

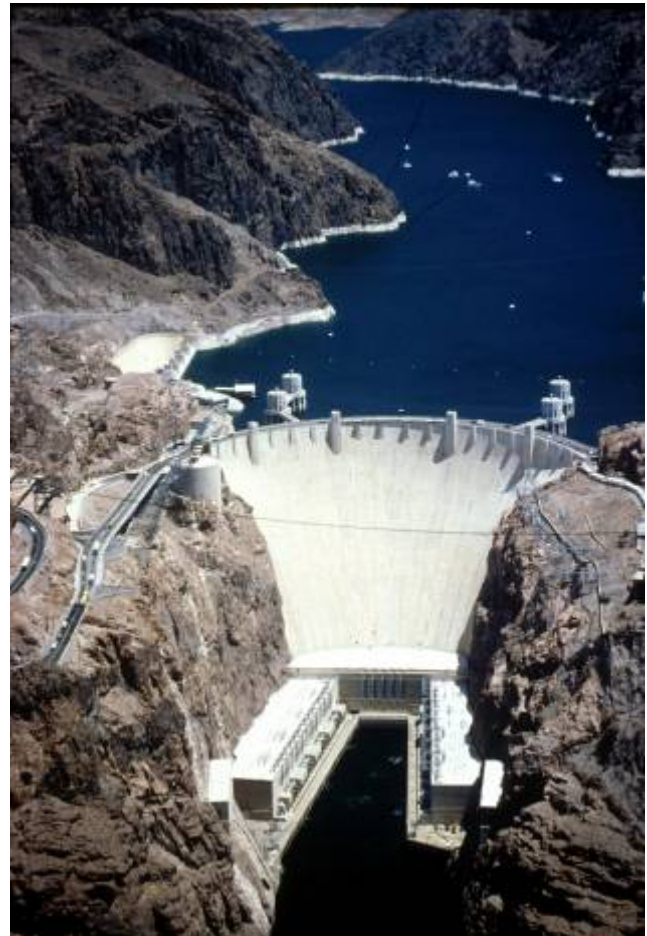
From *Rime of the Ancient Mariner*
By Samuel Taylor Coleridge

Spanish, the journey through the valley was known as "jornado de muerte" - the journey of death. Water is the reason people originally settled here. It's the reason for the area's early industries - ranching - and subsequently as a stop on the Union Pacific Railroad line.

In 1922, the Colorado River Compact defined the geographic areas of the upper and lower basins of the Colorado River. The compact allotted 7.5 million acre-feet per year to each of the basins. In 1928 the Boulder Canyon Project Act authorized the apportionment of 300,000 acre-feet per year to Nevada. This figure seemed reasonable to those who negotiated for Nevada since there were fewer than 90,000 people in the entire state and less than 9,000 in the Las Vegas Valley. Groundwater was abundant and no one could have possibly foreseen the growth that would occur in the latter half of the century. Las Vegas relied completely upon well water and did not even begin to draw water from the Colorado River until the mid-1950's.

In order to "tame" the Colorado River, which on occasion would flood various areas of its basin due to snowmelt in the Rockies, a dam would be needed - a darn big dam! Boulder Dam construction began in 1931. Later

named for President Herbert Hoover, Hoover Dam was completed in 1936, two years ahead of schedule. The primary purpose of the dam, as previously stated, was to provide flood control for the basin states. But it was, and still is, a source of electrical power for Southern California, Arizona and Nevada. The states receive about 56%, 24% and 20% of the energy generated respectively. Surprisingly, Las Vegas, located about 30 miles away, receives only about 4 percent of its power from



Hoover Dam. Upon completion, the dam created Lake Mead, named for Elwood Mead who oversaw construction of the dam. Lake Mead covers 247 square miles and holds about 28.5 million acre feet of water. That's about two average years of snowmelt. It's also enough to cover the state of Pennsylvania in water with a depth of about one foot.

Fast forward to the beginning of the 21st Century. Explosive growth and a prolonged drought have put a strain on the provision of water to the Las Vegas Valley. Unlike 50 years ago, Lake Mead is now the major provider of water to the valley.

About 88 percent of the water used in the Las Vegas Valley comes from Lake Mead. The level of Lake Mead is currently about 80 feet below normal. People continue to move to the valley – about 6,000 new residents per month. Businesses continue to open in support of the existing and new residents.

So how does the Las Vegas Valley accommodate the new residents and commercial development? Nevada's allotment of the water from the Colorado River is 300,000 acre feet. An acre foot is the amount of water needed to cover one acre with one foot of water which amounts to about 325,851 gallons of water. It's generally accepted that a household of four persons in the United States consumes approximately one acre foot of water per year. Given that, the capacity for water available from the Colorado River for Nevada would be 300,000 households. As of July 2006, there were over 700,000 residential units in the valley. In addition, there are the non-residential water users.

Some dam facts

- Hoover Dam was built at a cost of \$49 million, \$676 million adjusted for inflation.
- Deaths attributed to construction: 96 (Contrary to popular legend, no one is entombed in the cement.)
- The first person to die in the construction of Hoover Dam was J.G. Tierney, a surveyor who drowned while looking for an ideal spot for the dam. The last person to die working on the dam did so 13 years to the day later. His name? Patrick W. Tierney – J.G. Tierney's son.
- The construction hardhat was invented and first used by the workers of Hoover Dam. It was originally made of two baseball caps dipped in tar and allowed to harden.
- The "spillways" on the dam have only been used twice; the first time during a planned test in 1941 and the second during the summer of 1983 when a snowmelt flood in the Colorado River basin made it necessary.
- Hoover Dam was named by the American Association of Civil Engineers as one of the seven modern engineering marvels of the U.S.

On the surface, it would appear that demand for water is considerably higher than the ability to supply it. However, there are a number of factors that help supply keep pace with demand. Valley households are more water efficient than the typical American household. Households in the Las Vegas Valley use about 50 percent fewer gallons of water annually than the national average. This means that the 300,000 acre feet available from the Colorado River can supply nearly 600,000 residential units with water.

The reasons for the lower usage are water smart landscapes that use little if any turf, low flow faucets and toilets and energy efficient homes. Turf requires 73 gallons of water per square foot annually whereas water smart landscapes (desert/xeriscape) require 17.2 gallons per square foot. To gain some perspective, imagine one large, 75 gallon water heater for every square foot of turf in your yard. If you have a 1,000 square foot lawn you would need to empty 1,000 of these water heaters on it to adequately irrigate it for one year. Imagine!

In 1995, the National Energy Policy Act (NEPA) mandated the use of toilets that use no more than 1.6 gallons per flush compared to old toilets that use 3.5 gallons per flush. In addition shower heads and faucets have been developed that cut the number of gallons per minute used by nearly half. The NEPA legislation is significant due to the fact that about 40 percent of all housing units in the valley have been built since its inception in 1995.

In addition to the conservation measures implemented by the local agencies, the valley receives return flow credits for water captured, treated and returned to the Colorado River. What that means is that for every acre foot returned to the river, we can draw out an acre foot. Nearly 230,000 acre feet of water were returned during the past year, which means that the Las Vegas Valley can draw over 500,000 acre feet of water from the river.

Xeriscape

Xeriscape, pronounced zeer'-ih-scape, is a water-smart landscape that includes colorful flowers, plants and trees. Xeriscape is a water-saving alternative to yards consisting primarily of grass.



Despite some common misconceptions, xeriscape is NOT brown lava rock and a lone palm tree. source: www.snwa.com. Visit one of these gardens to get more information and see the beauty of the desert.

Remove your grass

SNWA offers property owners \$2 per square foot of grass removed and replaced with a water-efficient landscape for the first 1,500 square feet through the Water Smart Landscapes rebate program. The rebate for the conversion of grass in excess of 1,500 square feet is \$1 per square foot. Find out how to apply.

Some Lake Mead facts

- Largest man-made reservoir in the United States.
- Size: 247 square miles.
- It is 110 miles from Hoover Dam to Lake Mead's furthest point to the northeast.
- Capacity (full pool): 28,537,000 acre feet.
- Normal lake elevation: 1,200 feet
- Current lake elevation: 1,125 feet

The question on everyone's mind is who is using the water in the Las Vegas Valley? According to the Southern Nevada Water Authority (SNWA) 42.9 percent of water usage goes to single-family residential and 15 percent goes to multi-family residential. Nearly *three-fourths* of residential water consumption goes toward outdoor landscaping, which cannot be reclaimed.

Surprising to some may be that golf courses and resorts use only about 7.9 and 7 percent respectively of the areas water. About 60 percent of the golf courses in the Las Vegas Valley use reclaimed and/or non-potable water to irrigate their grounds.



As for resorts, in spite of the sometimes elaborate water features many display, they are efficient water users. It's in their best interest to be water smart (keep costs low!) and have the most efficient equipment available.

The Las Vegas Valley is currently in "Drought Alert" status. Area residents and businesses have responded well. Southern Nevada's consumptive water use declined by about 20 billion gallons between 2002 and 2005,

despite the fact that there were nearly 250,000 new residents and nearly 40 million annual visitors.

For information about Southern Nevada's water resources and conservation tips, go to the SNWA website at: www.snwa.com. And please don't hose down your driveway, as this wastes precious water.

More dam facts

- Dam height: 726.4 feet
- Dam length: 1,244 feet in length
- Dam thickness: 660 feet at its base, 45 feet at its crest
- Dam visitors: 8 – 10 million per year
- The dam has 4.36 million cubic yards of concrete which is still curing, and gaining in strength every day.
- 45 million pounds of reinforcing steel
- Electric power produced: 2,080 megawatts (a megawatt is one-million watts)
- The pioneer town of St. Thomas, Nevada was flooded by the rising waters of Lake Mead in 1938. The 400 inhabitants had to find homes elsewhere.
- The Lake Mead National Recreation Area is the fifth busiest U.S. national park.